

preservation issues

MISSOURI DEPARTMENT OF NATURAL RESOURCES
HISTORIC PRESERVATION PROGRAM

NEWS FOR THE PRESERVATION COMMUNITY

★ Vol. 1, No. 6 ★

“Missouri has a surprising number of historic truss bridges still standing ...”

bridges that are rare in most other states exist here in abundance,” said Mark Kross, Missouri Highway and Transportation Department spokesman. “There are two major reasons for this; Missouri’s large number of natural streams and rivers requiring bridges is one. Also, many other states began programs of bridge replacement in the 1950s. Missouri’s replacement program started more than 30 years later.”

Kross was referring to the results of a two-year comprehensive survey of the state’s highway bridges that was begun in 1989 and is now nearing completion. Sponsored by the Highway Department, the survey was conducted by Clayton Fraser of Fraserdesign, Loveland, Colorado.

Fraser, a nationally recognized expert on historic bridges, made some interesting discoveries about Missouri’s bridges. “There are nearly 25,000 highway bridges in Missouri,” Fraser said, “and about 13,000 of those were built prior to 1951. This means Missouri has one of the largest concentrations of old bridges in the nation.” The firm has selected 2,500 bridges for further study and evaluation. Bridges determined to contribute significantly to the history of transportation or historic engineering development or that are outstanding examples of a master bridge

designer’s or builder’s work in Missouri or the nation will be nominated to the National Register of Historic Places.

The preservation of Missouri’s most significant historic bridges has become a critical issue in recent years. Increased federal monies for highway bridge replacement since 1982 and the abandonment of railroad lines across the state are making bridges one of Missouri’s most threatened cultural resources. For example, the Historic Preservation Program identified approximately 800 metal through-truss highway bridges in 1982; by 1991, Fraserdesign’s survey found about 440 of these still existed. Public safety issues, combined with the difficulty of identifying viable alternatives to demolition, contribute to the high rate of loss and complicate bridge preservation. Decisions regarding which bridges are most worthy

of preservation have been hampered in the past by a lack of comprehensive survey data. The Missouri historic bridge inventory will be a major step in solving this dilemma.

The bridge survey was a result of the Surface Transportation and Uniform Relocation Assistance Act of 1987 which states that it is in the national interest to preserve historic bridges; directs state highway agencies to identify historic bridges; allows for the use of federal funds for bridge preservation; and calls for the development of specific standards for the rehabilitation of historic bridges. The act has been and will be of invaluable assistance in Missouri’s statewide effort to preserve its most significant bridges as a record of the engineering achievements of the past and for the benefit of future generations of Missourians. — **Karen Grace**



PHOTO: GERALD LEE GILLEARD

“Stone” arched bridge (ca 1906) at Truman Road and Blue Ridge Boulevard in Independence, Jackson County.

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November/December 1991

**State
Historic
Preservation
Officer**

The Missouri Department of Natural Resources plays an active role in preserving our state's wealth of cultural resources. One of the department's most effective tools is the Historic Preservation Revolving Fund, an innovative program that allows us to acquire and preserve endangered historic properties without long-term state ownership.

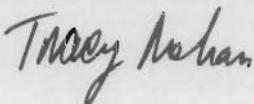
The availability of revolving fund monies has allowed the department to spark preservation of significant historic buildings that might otherwise have been lost. Proceeds obtained through the sale of revolving fund properties are returned to the fund, permitting the preservation of additional properties. However, the demand for assistance far exceeds the amount of funds available. Due to cutbacks in federal programs, rising real estate costs, and development pressures, the need for preservation assistance is constantly increasing.

To address this need, the department has initiated a number of fundraising activities, ranging from direct mail solicitation to special events to a major capital campaign. An outpouring of support was received in response to our direct-mail campaign to acquire the Jean Baptiste Bequette-Ribault House, one of Ste. Genevieve's most important French Colonial resources.

We are currently preparing to launch a major capital campaign to help augment the fund's limited financial resources. We will contract with a professional consultant to develop the foundation for this campaign. At the same time, we are actively marketing existing revolving fund properties. We are also encouraging the donation of marketable properties to the fund. As all properties sold under the fund are sold subject to restrictive covenants, donation is an excellent means of ensuring the future preservation of a property while assisting the operation potential of the revolving fund.

We also hope to find ways to assist preservation at the local level. One possibility we are investigating is the idea of joint fundraising events, proceeds of which would benefit both the fund and a specific local project.

We appreciate your past support of revolving fund activities. Through our proposed new fundraising efforts, we hope to generate the level of funding that will permit expansion of fund assistance and provide the foundation to build a new century of achievement for historic preservation. — *Tracy Mehan, Director, Department of Natural Resources*



For more information about the Missouri Historic Preservation Revolving Fund, contact Jane Beetem, Revolving Fund Coordinator at (314) 751-5373.

**Review
And
Compliance**

The historic Waddell "A" truss bridge has a new home in Parkville, thanks to a mediation requirement

for all federal projects that might have an adverse effect on cultural resources.

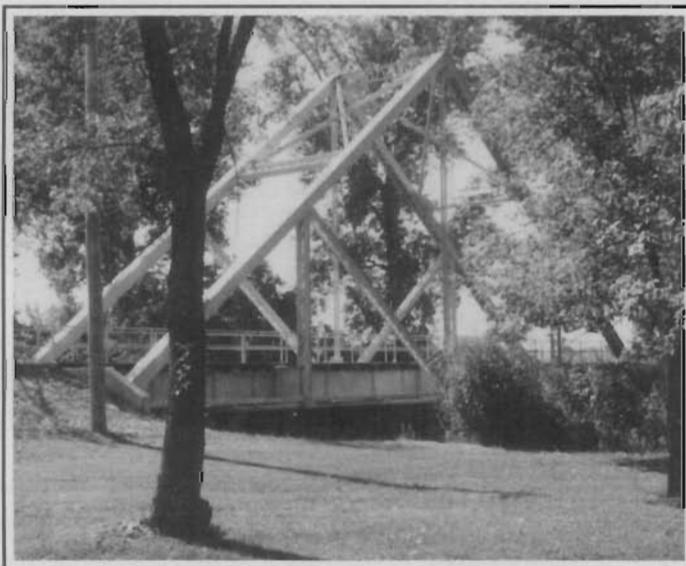
For nearly 85 years, John Waddell's engineering masterpiece spanned the Linn Branch Creek near Trimble until construction of the Smithville Dam by the Army Corps of Engineers required its removal. Because the bridge is a rare and distinctive structure, the Corps agreed that it should first be carefully documented by the Historic American Engineering Record (HAER) and then dismantled and stored at the Smithville project site until a suitable new home could be found.

Engineering historian Donald Jackson, in his report for HAER, found that although "the 'A' truss bridge was widely used in the midwest ... the bridge over Linn Branch Creek ... is one of only two surviving examples of this truss type [in the United States]. Designed and patented by world-famous Kansas City engineer John A.L. Waddell, the 'A' truss is a very significant type of late 19th century, short-span railroad bridge that used pin-connections to join its major structural members."

Although the dismantled bridge was in storage and available for adoption for a number of years, a site for reconstruction was finally found. Warren Gresham, the mayor of Parkville, heard about the Waddell "A" truss and wrote to Robert Ruf of the Corps that "... Parkville is interested in obtaining a bridge that we understand is in your possession and needs a good home. We are developing a historical public park, i.e., English Landing Park, bordering the Missouri River. We badly need to tie in both sides of this park with a walking bridge to span a small creek down the center of the park."

Today, after many hours of volunteer labor and generous donations of materials, the reconstructed "A" truss is the centerpiece of English Landing Park (see photo left) and is a unique historic attraction for Parkville residents and visitors alike. — *Karen Grace*

PHOTO GERALD LEE GILLEARD



The Waddell "A" truss bridge shown in its new home in Parkville after it was moved from the Smithville area. It is one of two bridges of this truss type known to exist in the United States and was designed by John A.L. Waddell, a renowned Kansas City bridge designer. The Waddell "A" truss was first a railroad bridge, then a highway bridge, and is now a foot bridge in a city park.

Archaeology Profiles

In most historic bridge replacement projects, one or more prehistoric archaeological sites are also found in the area. And many of these sites are discovered intact underneath historic occupational debris.

This means that the same sites selected for occupation by many prehistoric Missourians were also chosen for settlement by their historic counterparts. For Missouri's

prehistoric inhabitants, proximity to waterways provided a diversity of resources - terrestrial and aquatic animals for food, flora, water for drinking and use in pottery manufacturing, and aesthetical considerations. Streams and rivers also served as avenues of transportation for prehistoric peoples.

The accessibility to waterways provided the same benefits to Missourians of the early historic periods. Also, prehistoric trails were used, eventually widened, improved, and converted to roadways. The intersection of these transportation networks with waterways influenced the location of hamlets, villages, towns, and cities. By the mid-nineteenth century, these communities were requesting that bridges be

built to enhance their town's economic and social potential by improving accessibility. (See Caplinger Bridge photo, left.)

Although the erection of the early highway bridges might have impacted older prehistoric and historic resources, construction of these bridges affected less area than the spans now being built to replace them. Not only were they narrower, but they were built to span streams perpendicularly in order to minimize length and cost. Roadway alignment and designs to span regulatory floodways were not important factors historically but are of primary importance today. Consequently, modern bridge replacement projects have a greater chance of affecting intact cultural deposits because of the larger project impact zone.

With the emphasis we now see, dating from the mid-1980s, to consider Missouri's historic bridges as substantial cultural resources, we must not overlook the attention necessary to address associated prehistoric and historic archaeological sites as well. - **Mark Kross**

Archaeologist Mark Kross is Environmental Studies Coordinator for the Design Division in the Missouri Highway and Transportation Department.

MISSOURI

HISTORIC ENGINEERING

Pratt Truss Bridges, ca 1870-ca 1920

Characteristics:

- These truss bridges are found in three configurations - deck, through, and pony.
- Known examples are constructed of metal; wrought iron, cast iron, steel, and various combinations.
- The structural connections are usually pinned or riveted.
- The bottom chord and diagonals are in tension and the top chords and verticals are in compression.
- In highway bridges the hip (adjacent to inclined end posts) verticals are frequently in tension rather than compression.
- The length of spans are either medium (less than 200 feet) or short (40 feet to 125 feet).

PHOTO: GÉRALD LEE GILLEARD



The Caplinger Mill Bridge (ca 1885) in Cedar County is an example of a Pratt, through-truss bridge, the most common truss type in the nation. This particular bridge is unusual because it has had few alterations and still retains its decorative portal bracing and strut and its distinctive bridge plate. It is also part of a once-common Ozark development pattern consisting of bridge, mill, and store forming a hamlet. Progress has caused most of these hamlets to grow into today's town or to vanish.

Correction:

In the September-October issue, Cyd Millstein's company was incorrectly given as "Art Historical Research;" the correct name is Architectural and Art Historical Research. Deon Wolfenbarger conducted the early part of the Kansas City parks survey; her name was, unintentionally, not mentioned. We regret any inconvenience our error caused to Millstein or Wolfenbarger.

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Editor: Karen Grace
Designer: Musick & Co.

Submissions for the January-February edition of Preservation Issues are due by November 29, 1991.

DNR Acquires Pipe Bridge

The Department of Natural Resources' Division of Parks, Recreation, and Historic Preservation has recently acquired an historic (ca 1894) pipe truss bridge which was replaced in a Scotland County road project.

There was no charge for the one-of-a-kind bridge, although the department will be required to move, reconstruct, and maintain the historic structure. The location for reconstruction has not been determined. "We are looking for a place, within the park system, where this bridge could be utilized," said Chief of Development Joe Goedde. "It should help meet our needs as well as help the public appreciate the value of the bridge from a historic preservation standpoint."

Natural Resources currently owns and maintains all four of Missouri's historic covered bridges and several depression era Civilian Conservation Corps bridges which are located within state parks. — *Karen Grace*

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preservation **issues**

Missouri Department of Natural Resources
Historic Preservation Program
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Dates to Remember

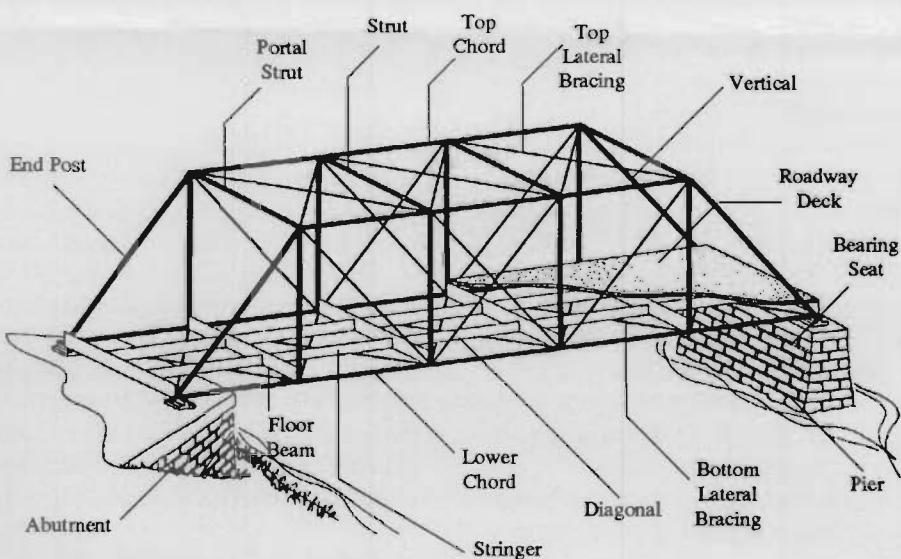
Conservation in Field Archaeology Nov. 4-8 in Columbia. For more information call Leanne Stone, Program Coordinator (702) 784-4046.

Missouri Advisory Council on Historic Preservation meeting Nov. 8 in Jefferson City. For more information call (314) 751-5365.

Playing the Political Game for Preservation: Crisis Management Nov. 9 in Liberty. For more information call Judith Deel (314) 751-7862 or Maura Johnson (816) 792-6109.

Jackson County Historical Society Annual Dinner Nov. 14 in Independence. United States Archivist Don Wilson, Ph.D., will speak. For more information call Barbara Potts, Executive Director (816) 461-1897.

Local Government Conference Dec. 7 in St. Louis. For more information call Judith Deel (314) 751-7862 or Jan Cameron (314) 622-3400, Ext. 212.



Anatomy of a Metal Truss Bridge

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